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ON NATURAL SCIENCE IN GENERAL.

[TRANSLATION OF THE ELEVENTH LECTURE OF F. W. J. VON SCHELLING "ON THE METHOD OF UNIVERSITY STUDY." BY ELLA S. MORGAN.]

When we speak of absolute Nature, we understand by it the Universe, uncontrasted with aught else, and then distinguish within it the two sides: one in which ideas are manifested in the real, the other in which they are manifested in the ideal way. Both are the result of one and the same creative energy, and in accordance with the same laws, and consequently in the Universe itself there is no duality, but, on the contrary, the most perfect unity.

To comprehend Nature as the universal birth of ideas, we must return to the origin and significance of ideas themselves.

The origin lies in the eternal law of absoluteness, viz., that it is to be its own object; for by virtue of this law the creative energy is the reflection of the entire universality and essence, through particular forms, which for this reason, while they are particulars, are at the same time universals — what the philosophers have called monads, or ideas.

In philosophy is shown more completely that Ideas are the only means through which particular things can be in God, and according to this law there are as many universals as there are particular things, and yet, by reason of the identity of their essence, there is in all but one universe. Although in God ideas are purely and absolutely ideal, still they are not dead, but living, the first products of divine self-contemplation, which therefore partake of all the qualities of His being, and, notwithstanding their particular form, participate in the undivided and absolute reality.

By virtue of this participation they are, like God, creative, and work according to the same laws and in the same way, actualizing their essence in particulars, and making it manifest in particular individual things; being in their own nature not of time, but becoming, from the stand-point of the particular, both in and of time. Ideas are the souls of things, as things are the bodies of ideas; in this relationship the former are necessarily infinite, the latter finite. But the infinite and the finite can never become one, except through internal and essential identity. If therefore the finite, in itself and as finite, does not comprehend and express the whole infinite, seen from the objective side, then the idea cannot enter into it as soul, and the essence is not manifested in and for itself, but through something else, namely, through finite being. But on the contrary, when the finite, as such, reflects the whole infinite as the most perfect organism, which is already in itself the entire idea, then the essence of the thing is also manifest as soul — as idea — and the reality is again resolved into ideality. Reason is this complete identity, and is therefore the centre of the Universe, and consequently of the objective actualization of ideas.

As therefore the absolute, in the eternal act of knowing itself, becomes objective in ideas, so the latter act eternally in nature, which, regarded sensuously, or from the stand-point of particular things, gives birth to them in time; and, having received the divine seed of ideas, becomes fruitful without cessation.

We are now at the point where we can make clear the two methods of knowing and conceiving nature in their antithesis. The one, which considers Nature as the instrument of ideas, or, to speak generally, as the real side of the absolute, and hence itself absolute; the other, which conceives Nature itself, apart from the ideal, and considers it in its relativity. In a general way, we may call the former the philosophical, the latter the empirical method, and the question of their relative value we shall settle by an investigation as to whether the empirical method can ever in any sense lead to a science of nature.

It is evident that the empirical view does not rise above matter as matter, and considers it as something in and for itself, while the philosophical view comprehends it only as an ideal transformed into the real (by the act of subject becoming object). Ideas are symbolized in things, and since they are forms of absolute knowing, they manifest themselves in these as forms of finite existence — as plastic art slays its ideas in order to give them objectivity. Empiricism looks at existence independent of its significance, it being the nature of a symbol to have a life of its own. In this separation it can appear only as a pure finite, with entire negation of the infinite.

If this theory had only developed itself in later physics to universality, and if the idea of spirit were not absolutely opposed to that notion of matter from pure materiality, which prevents its being an independent whole, and from attaining that completion which it had in the system of the old Atomists, especially in Epicurus. This system (atomism), in the annihilation of nature itself, freed the soul from longing and fear, instead of, like the former, taking up all the ideas of dogmatism and preserving the duality out of which it arose.

This system of thought, which owes its origin to Cartesius, completely changed the relation of mind and science to nature. Without higher conceptions of matter and nature than those of the atomic theory, yet lacking the courage to develop them into a comprehensive whole, it considers nature in general as a sealed book, a secret, which by accident or good luck can be only partially disclosed, never comprehended as a whole. If it is essential to the conception of science that it is not atomistic, but is created from and by one spirit, and that the idea of the whole precedes that of the parts, not *vice versa*, then it is clear that a true science of nature is impossible and unattainable on this theory.

The purely finite conception, from its very nature, dispenses with any organic theory, and puts in its place the simple mechanical series, and in the place of genetic deduction mere explanation of ·facts. From observed effects causes are inferred ; but that these, and only these are the causes, would not necessarily make the effects more comprehensible, even if the method of conclusion be granted, and if there were not phenomena which follow immediately from an absolute principle. For it does not follow that they might not result from some other causes. Only when the causes are known in and for themselves, and the effects are deduced from them, could a necessary connection of cause and effect be established and made evident. We will say nothing of the arrangement by which facts must necessarily follow from causes which have been inferred with reference to deducing certain facts from them.

The internality of all things, and that out of which arise all living phenomena of things, is the unity of the real and the ideal, which is in itself absolute repose, and is determined to action only by differentiation from without. Since the ground of all activity in nature is one and the same, is omnipresent, conditioned by no other, and is absolute in respect to each thing, then the different activities can be distinguished only according to form ; but none of these forms can be derived from another, because each in its kind is the same as the other. The unity of nature consists in this : that all phenomena have a common source, and not from the dependence of one phenomenon on another.

Even the suspicion of empiricism, that every thing in nature is dependent on a preëstablished harmony of all things, and no one thing changes or affects another except by mediation of the universal substance — even this was understood mechanically, and transformed into the absurdity of a cause operating at a distance, in the sense in which Newton and his successors understood this expression.

As matter had no life-principle in itself, and they wished to avoid explaining the higher phenomena — such as voluntary motion, etc. —as the effect of spirit on matter, they assumed something other than matter, which, while resembling matter, should by negation of its higher qualities — for instance, weight, and others — approach the negative conception of spirit as immaterial substance; as if the antithesis could thus be avoided, or even lessened. Even conceding the possibility of the idea of imponderable, incoercible matter, every thing in matter, according to this explanation, would still be determined by something external to it: death would be first, and life the derivative from it.

But even if, on the side of mechanism, every phenomenon could be completely comprehended in this explanation, the case would still be the same as an explanation of Homer, or any other great author, beginning with the forms of the alphabet, showing how they are combined and printed, and then finally how such a work was the result of these processes. This is more or less the method, and particularly in what has been called the theory of mathematical constructing in nature. We have already remarked that the mathematical forms which are used have a purely mechanical application. They are not the essential grounds of the phenomena themselves; on the contrary, they are entirely foreign and empirical: like supposing that the motions of the celestial bodies are the result of an impulse which they received from without. It is true that applied mathematics taught us how to foretell with exactitude the distances of planets, the time of their revolutions; but it gives not the least clew as to the reason or first cause of these motions. The so-called mathematical explanation of nature is therefore a mere formalism, which contains nothing of a true science of nature.

The opposition generally assumed between theory and experience has no true ground, for the reason that in the very idea of theory there is presupposed a reference to particular existence, and hence to experience. Absolute science is not theory, and the notion of the latter belongs to the undefined region between the particular and the general which characterizes ordinary knowledge. Theory is to be distinguished from experience only in this: that it expresses the latter more abstractly, apart from accidental conditions, and in its original form. To emphasize this, to represent clearly in every phenomenon the action of nature, is the business of experiment; hence both are equal in importance. We cannot see how experimental investigation of nature can be superior to theory, since the former is deduced entirely from theory, without whose inspiration the interrogations of nature could not be suggested, since the clearness of the answers obtained depends upon the reasonableness of the theory which prompted them. Both have this in common: that the point from which they begin is always some certain object, not a universal and absolute knowing. Both, if they remain true to their idea, are to be distinguished from false theorizing, whose object is to give an explanation of natural phenomena by inventing the causes; for both are limited to the mere statement or presentation of the phenomena themselves, and in this resemble *à priori* deduction, which, on the other hand, does not concern itself about explanation. If the effort in each were a conscious one, neither could admit any other aim than to penetrate from the periphery to the centre, as *à priori* deduction proceeds from the centre to the periphery. But in both directions it is an endless journey, and the possession of the centre being the first condition of science, it is necessarily unattainable in the former.

Every science demands for its objective existence an exoteric side; so there must be such a side in the science of nature or in philosophy, through which it may be a construction of nature. This side can be found only in experiment and its necessary correlative, theory (understood in the sense we have already indicated). But this must not claim to be science itself, or any thing other than the real side of science, in which we have extended in space and separated in time that which in the ideal is one and simultaneous. Only when empiricism endeavors to become in its way what science is in its — namely, empirical construction — only then will it be the body of science, and thus a part of it. It will then be taught and studied in the spirit of the whole, when, without explanation or hypothesis, it becomes a pure objective presentation of the phenomenon itself, and attempts to express no idea except by means of this. But not when inadequate empiricism looks out into the universe through its eccentric views, and applies them to the objects it meets; or when an empirical beginning of this sort rises superior to truths already proved and accepted; or forms them into a system, with separate, isolated experiences taken from a chain of facts of which it cannot see the whole; or taken from a multitude of contradictory, confusing conditions — an endeavor to oppose science which, to use a common comparison, is like trying to stop the inroads of the ocean with straw.

The absolute science of nature grounded in ideas is, therefore, the first and the only condition on which an empirical theory of nature can substitute a systematic procedure, directed toward a certain end, for a blind and aimless wandering. For the history of science shows that a construction of phenomena by means of experiment, such as we claim has never been accomplished, except in isolated cases, as the result of instinct; and there, in order to make this method of investigating nature generally accepted as valid, the primeval type of all construction in an absolute science is necessary.

I have developed the idea of such a science in your presence too often to make it necessary to give more than a general presentation now.

Science of nature, from its very idea, consists in rising above isolated phenomena and products to their idea, in which they are one, and from which they proceed as from a common source. Empiricism also has an obscure conception of nature as a whole, in which one is determined by all, and all by one. There is thus no use in knowing the one if the all is not known. But the point at which unity and multiplicity are identical is recognized only by philosophy, or rather, the knowledge of it is philosophy itself.

The first and necessary purpose is to comprehend the birth of all things from God, or the absolute, and as far as nature is the real side of the eternal act of subject become object, so far is the philosophy of nature the first and necessary side of philosophy itself.

The principle and element of it is absolute ideality, but this would be forever unknowable, wrapped in itself, if, as subjectivity, it did not transform itself into objectivity — finite, phenomenal nature being the symbol of this transformation. Philosophy, as a whole, is therefore absolute idealism, since that act (subject become object) is included in the divine knowing, and the philosophy of nature offers no antithesis in the first, only in the relative ideality, which is but one side of the absolute ideal. For the complete reflection of its essentiality into particularity, to the identity of both, produces in God the ideas; so that the unity of that through which they are in themselves, and real, with that through which they are in the absolute, and ideal, is one and the same. But in particular things, which are the mere copies of ideas, these unities do not appear as one; in nature, as the merely relative-real side, the first preponderates, so that it appears in contrast with the other where the unveiled, undisguised ideal shines forth as the negative, while the former, on the contrary, is its positive, and manifests itself as its principle — both being but the relative modes of manifestation of the one absolute ideal, in which they are united as one. According to this view, nature is one, not only in its essence, where it is the whole absolute act of subject become object, but also on its phenomenal side, where it manifests itself as the relative-real, or objective side of that act. Nature in its very essence is one; there is no inner antithesis in her; there is one life in all things, and one power to be, the same regulative principle through ideas. There is no pure materiality in nature, but there is everywhere soul symbolically represented in body, with a preponderance of one or the other in phenomena. For the same reason there can be but one science of nature, and the parts into which it is divided by the understanding are but branches of the same absolute knowing.

A priori deduction (construction) is representation of the real in the ideal, of the particular in the pure general in the idea. Every particular, as such, is form; but the necessary eternal, and absolute form of all forms is the source and origin. The act of making the subject objective (“*subject-objectivation*”) goes through all things and generates special forms, which, being different modes of appearance of the universal and unconditioned, are themselves unconditioned.

Since, further, the inner type of all things, by reason of their common source, must be one, and this can be necessarily understood, so the same necessity inheres in the construction which is founded on this one. Consequently, it does not need the confirmation of experience ; it is sufficient in itself, and may be used where practical experience is hindered by insurmountable obstacles — for instance, in the hidden mechanism of organic life and of universal motion. Not for deeds alone does necessity exist ; for knowledge also there is an unconditioned necessity, namely, the inner essence of the universe and of nature. And if the sight of a brave man in conflict with his surroundings is a spectacle on which even the gods look with joy, the struggle of the spirit for a conception of primeval nature and the eternal inner essence of its phenomena is no less sublime a sight. As in tragedy the conflict only really ceases when neither fate nor freedom is conquered, but when both are lifted to equality with each other, so the spirit comes from the battle at peace with nature when it is transfigured into the most perfect indifference with itself (*i. e.*, to self-equality, devoid of tension or contrast) and to the ideal.

In the struggle which rises from unsatisfied longing after knowledge of things, the poet has embodied his discoveries in the poem which is the peculiar possession of the German people, and thus opened an eternal spring of inspiration which alone is enough to rejuvenate the world of science, and give it a halo of new life. Let him who wishes to penetrate to the sanctuary of nature nourish his soul with these tones of a higher world, and in his early youth breathe in the strength which radiates from this poem like beams of light, and moves the innermost world.